

CLATMS

1. Protein having at least a portion of the sequence SEQ

ID N°3 following :

Asp Pro Glu Pro Ala Pro Pro Val Pro Thr Thr Ala Ala Ser Pro
5 Pro Ser Thr Ala Ala Ala Pro Pro Ala Pro Ala Thr Pro Val Ala
Pro Pro Pro Pro Ala Ala Ala Asn Thr Pro Asn Ala Gln Pro Gly
Asp Pro Asn Ala Ala Pro Pro Pro Ala Asp Pro Asn Ala Pro Pro
Pro Pro Val Ile Ala Pro Asn Ala Pro Gln Pro Val Arg Ile Asp
Asn Pro Val Gly Gly Phe Ser Phe Ala Leu Pro Ala Gly Trp Val
10 Glu Ser Asp Ala Ala His Phe Asp Tyr Gly Ser Ala Leu Leu Ser
Lys Thr Thr Gly Asp Pro Pro Phe Pro Gly Gln Pro Pro Pro Val
Ala Asn Asp Thr Arg Ile Val Leu Gly Arg Leu Asp Gln Lys Leu
Tyr Ala Ser Ala Glu Ala Thr Asp Ser Lys Ala Ala Arg Leu
Gly Ser Asp Met Gly Glu Phe Tyr Met Pro Tyr Pro Gly Thr Arg
15 Ile Asn Gln Glu Thr Val Ser Leu Asp Ala Asn Gly Val Ser Gly
Ser Ala Ser Tyr Tyr Glu Val Lys Phe Ser Asp Pro Ser Lys Pro
Asn Gly Gln Ile Trp Thr Gly Val Ile Gly Ser Pro Ala Ala Asn
Ala Pro Asp Ala Gly Pro Pro Gln Arg Trp Phe Val Val Trp Leu
Gly Thr Ala Asn Asn Pro Val Asp Lys Gly Ala Ala Lys Ala Leu
20 Ala Glu Ser Ile Arg Pro Leu Val Ala Pro Pro Pro Ala Pro Ala
Pro Ala Pro Ala Glu Pro Ala Pro Ala Pro Ala Gly Glu
Val Ala Pro Thr Pro Thr Pro Thr Pro Gln Arg Thr Leu Pro
Ala

2. Protein according to claim 1 characterized in that it

25 has at least a portion of the sequence SEQ ID N° 2 following :

Met His Gln Val Asp Pro Asn Leu Thr Arg Arg Lys Gly Arg Leu
Ala Ala Leu Ala Ile Ala Ala Met Ala Ser Ala Ser Leu Val Thr
Val Ala Val Pro Ala Thr Ala Asn Ala Asp Pro Glu Pro Ala Pro
Pro Val Pro Thr Thr Ala Ala Ser Pro Pro Ser Thr Ala Ala Ala
5 Pro Pro Ala Pro Ala Thr Pro Val Ala Pro Pro Pro Pro Ala Ala
Ala Asn Thr Pro Asn Ala Gln Pro Gly Asp Pro Asn Ala Ala Pro
Pro Pro Ala Asp Pro Asn Ala Pro Pro Pro Pro Val Ile Ala Pro
Asn Ala Pro Gln Pro Val Arg Ile Asp Asn Pro Val Gly Gly Phe
Ser Phe Ala Leu Pro Ala Gly Trp Val Glu Ser Asp Ala Ala His
10 Phe Asp Tyr Gly Ser Ala Leu Leu Ser Lys Thr Thr Gly Asp Pro
Pro Phe Pro Gly Gln Pro Pro Pro Val Ala Asn Asp Thr Arg Ile
Val Leu Gly Arg Leu Asp Gln Lys Leu Tyr Ala Ser Ala Glu Ala
Thr Asp Ser Lys Ala Ala Arg Leu Gly Ser Asp Met Gly Glu
Phe Tyr Met Pro Tyr Pro Gly Thr Arg Ile Asn Gln Glu Thr Val
15 Ser Leu Asp Ala Asn Gly Val Ser Gly Ser Ala Ser Tyr Tyr Glu
Val Lys Phe Ser Asp Pro Ser Lys Pro Asn Gly Gln Ile Trp Thr
Gly Val Ile Gly Ser Pro Ala Ala Asn Ala Pro Asp Ala Gly Pro
Pro Gln Arg Trp Phe Val Val Trp Leu Gly Thr Ala Asn Asn Pro
Val Asp Lys Gly Ala Ala Lys Ala Leu Ala Glu Ser Ile Arg Pro
20 Leu Val Ala Pro Pro Pro Ala Pro Ala Pro Ala Glu Pro
Ala Pro Ala Pro Ala Pro Ala Gly Glu Val Ala Pro Thr Pro Thr
Thr Pro Thr Pro Gln Arg Thr Leu Pro Ala

3. Hybrid protein comprising at least a portion of one of
the sequences SEQ ID N° 2 or SEQ ID N° 3 according to one of claims
1 and 2 and a sequence of a peptide or a protein able to induce
25

an immune response.

4. Protein according to claim 3, characterized in that the immune response is a humoral response and/or a cellular response.

5. Protein according to one of claims 3 and 4 characterized in that the peptide or the protein is a portion, in particular an epitope, of diphtheria toxin, tetanus toxin, the HBS antigen of the HBV virus, or the VP1 antigen of the poliomyelitis virus or any other viral toxin or antigen.

10 6. Oligonucleotide coding for a protein according to one of claims 1 to 5.

7. DNA according to claim 6 characterized in that it has at least a portion of the sequence SEQ ID N°1 following:

15 GT GCTCGGGCCC AACGGTGCAG GCAAGTCCAC CGCCCTGCAT GTTATCGCGG
GGCTGCTTCG CCCCCGACGC GGGCTTGGTA CGTTTGGGGG ACCGGGTGTT
GACCGACACC GAGGCCGGGG TGAATGTGGC GACCCACGAC CGTCGAGTCG
GGCTGCTGTT GCAAGACCCG TTGTTGTTTC CACACCTGAG CGTGGCCAAA
AACGTGGCCT TCGGACCACA ATGCCGTGCG GGGATGTTTG GGTCCGGCG
20 CGCGCTAGGA CAAGGGCGTC GGCAC TGCGA TGGCTGCGCG AGGTGAACGC
CGAGCAGTTC GCCGACCGTA AGCCTCGTCA GCTATCCGGG GGCCAAAGCCC
AGCGCGTCGC CATCGCGCGA GCGTTGGCGG CCGAACCGGA TGTGTTGCTG
CTCGACGAGC CGCTGACCGG ACTCGATGTG GCCGGCGCG CGGGTATCCG
TTCGGTGTG CGTAGTGTG TCGCGAGGAG CGGTTGCGCG GTAGTCCTGA
CGACCCATGA CCTGCTGGAC GTGTTCACGC TGGCCGACCG GGTATTGGTG
25 CTCGACTCCG CCACGATCGC CGAGATCGGC CCGGTTGCCG ATGTGCTTAC

CGCACCTCGC AGTCGTTTCG GAGCCCGTAT CGCCGGAGTC AACCTGGTCA
ATGGGACCAT TGGTCCGGAC GGCTCGCTGC GCACCCAGTC CGGCGCCAC
TGGTACGGCA CCCCCGGTCCA GGATTTGCCT ACTGGGCATG AGGCAATCGC
GGTGTTCGGCG CCGACGGCGG TGGCGGTGTA TCCGGAACCG CCGCACGGAA
5 CCCCGCGCAA TATCGTCGGG CTGACGGTGG CGGAGGTGGA TACCCGGCGA
CCCACGGTCC TGGTGCACGG GCATGATCAG CCTGGTGGCG CGCCTGGCCT
'TGGCGCATGC ATCACCGTCG ATGCCGCCAC CGAACTGCGT CTGGCGCCCG
GATCGCGCGT GTGGTTCAAGC GTCAAGGCAGC AGGAAGTGGC CCTGCACCCG
GCACCCACC AACACGCCAG TTCATGAGCC GACCCGCGCC GTCCTGGCGT
10 CGCGCCGTTA ACACGGTAGG TTCTTCGCCA TGCATCAGGT GGACCCCAAC
TTGACACGTC GCAAGGGACG ATTGGCGGCA CTGGCTATCG CGGCGATGGC
CAGCGCCAGC CTGGTGACCG TTGCGGTGCC CGCGACCGCC AACGCCGATC
CGGAGCCAGC GCCCCCGGTA CCCACAACGG CCGCCTCGCC GCCGTCGACC
GCTGCAGCGC CACCCGCACC GGCGACACCT GTTGCACCCCG CACCACCGGC
15 CGCCGCCAAC ACGCCGAATG CCCAGCCGGG CGATCCCAAC GCAGCACCTC
CGCCGGCCGA CCCGAACGCA CCGCCGCCAC CTGTCATTGC CCCAAACGCA
CCCCAACCTG TCCGGATCGA CAACCCGGTT GGAGGATTCA GCTTCGGCGCT
GCCTGCTGGC TGGGTGGAGT CTGACGCCGC CCACTTCGAC TACGGTTCAAG
CACTCCTCAG CAAAACCACC GGGGACCCGC CATTTCGGCG ACAGCCGCCG
20 CCGGTGGCCA ATGACACCCG TATCGTGCTC GGCCGGCTAG ACCAAAAGCT
TTACGCCAGC GCCGAAGCCA CCGACTCCAA GGCGCGGCC CGGTTGGGCT
CGGACATGGG TGAGTTCTAT ATGCCCTACC CGGGCACCCG GATCAACCAG
GAAACCGTCT CGCTCGACGC CAACGGGGTG TCTGGAAGCG CGTCGTATTA
CGAAGTCAAG TTCAGCGATC CGAGTAAGCC GAACGGCCAG ATCTGGACGG
25 GCGTAATCGG CTCCGGCGG GCGAACGCAC CGGACGCCGG GCCCCCTCAG

CGCTGGTTTG TGGTATGGCT CGGGACCGCC AACAAACCCGG TGGACAAGGG
CGCGGCCAAG GCGCTGGCCG AATCGATCCG GCCTTGTC GCCTTGTC GCCTTGTC
CGCGGCCGGC ACCGGCTCCT GCAGAGCCCG CTCCGGCGCC GGCGCCGGCC
GGGGAAGTCG CTCCTACCCC GACGACACCG ACACCGCAGC GGACCTTACC
5 GCCCTGACC

8. Microorganism producing a protein according to one of claims 1 to 5.

9. Microorganism according to claim 8, characterized in that said protein is present at least in part on its surface.

10 10. Microorganism according to claim 9, characterized in that it is a bacterium.

11 11. Microorganism according to one of claims 8 to 10, characterized in that it is a mycobacterium, in particular M. bovis BCG.

12 12. Pharmaceutical composition comprising an effective quantity of a protein or a microorganism according to one of claims 1 to 5 and 8 to 11 in combination with pharmaceutically compatible diluents or adjuvants.

20 13. Drug or vaccine comprising a protein or a microorganism according to one of claims 1 to 5 and 8 to 11.

14. Process for detecting specific tuberculosis antibodies, in which a biological fluid, liable to contain said antibodies, is brought into contact with a protein according to one of claims
25 1 to 5.

15. Process according to claim 14, characterized in that said proteins are fixed on a support.

16. Assay kit for implementing the process according to one of claims 14 and 15, comprising at least a protein preparation according to one of claims 1 to 5 and buffer solutions for using the process.

5 17. Kit according to claim 16 characterized in that it comprises a reagent for revealing the antibody-protein complex formed.

10 18. Antibody reacting specifically with a protein according to one of claims 1 to 5.